

STATE OF ALASKA  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL AND GAS  
Alaska Oil and Gas Conservation Committee

3001 Porcupine Drive  
Anchorage, Alaska 99504

Re: THE MOTION OF THE OIL AND GAS ) Conservation Order No. 98-A  
CONSERVATION COMMITTEE to hear ) Prudhoe Bay Field  
testimony to determine pool rules ) Prudhoe Bay Kuparuk River Oil Pool  
for the Prudhoe Bay Kuparuk River )  
Oil Pool. ) March 12, 1971

IT APPEARING THAT:

1. The Alaska Oil and Gas Conservation Committee moved to hear testimony to determine pool rules for the Prudhoe Bay Kuparuk River Oil Pool, now regulated by Conservation Order No. 83-A which expires March 12, 1971.
2. Notice of public hearing was published in the Anchorage Daily News on December 24, 1970.
3. A public hearing was held in the Sydney Laurence Auditorium, Anchorage, Alaska, on February 9, 1971. Testimony was presented in response to the motion. Affected and interested parties were heard.
4. The hearing was continued until the close of business on February 16, 1971. Additional statements were received.
5. The complete record of Conservation File No. 83-A was incorporated into the record.

AND IT FURTHER APPEARING THAT:

1. A sequence of mudstones interbedded with very fine- to medium-grained sands is provisionally called the Kuparuk River Formation.
2. Oil is found in some of the sandstones of the Kuparuk River Formation and an oil pool has been defined.
3. The areal extent of the hydrocarbon-bearing sands of the Kuparuk River Formation cannot be determined, but available information indicates an area where oil production can reasonably be expected.
4. The sandstones may occur at widely separated depths within the formation.
5. The sandstones are lenticular and a single lens may not be continuous over wide areas and may not be continuous from well to well.

6. The sand lenses may have sufficient permeability so that one well would drain 640 acres, but each lens may not be penetrated by development on 640-acre spacing.
7. Thin productive sands which do not merit individual completion attempts should be grouped together to prevent waste and to ensure the greatest ultimate recovery of hydrocarbons.
8. In order to prevent waste and protect correlative rights there should be at least 1,000 feet between wells, and wells should be at least 500 feet from property lines where ownership changes.
9. Conventional casing and cementing procedures are unsafe if thawing occurs because thawing of the permafrost during production might cause sufficient subsidence and frictional drag to result in collapse of the casing within the upper 500 feet, and it is necessary to either prevent thawing of the adjoining permafrost or to permit movement of the surface casing.
10. Either prevention of thawing or permitting movement of the upper portion of the surface casing is safe and technologically sound; however, other methods may likewise be safe and sound, and continued surveillance by the Committee of all techniques will be necessary to insure maximum safety in future operations.
11. Installation of downhole automatic shut-in valves below the base of the permafrost and adequate blowout prevention equipment and practices might prevent an uncontrolled flow of oil or gas.
12. To properly regulate and operate the reservoir, performance must be carefully monitored and bottomhole pressure and gas-oil ratio test data must be obtained soon after production commences.
13. Some reservoirs in the Kuparuk River Formation are undersaturated and without an associated gas cap.
14. Gas is dissolved in the oil and will be produced with the oil, and the flaring or venting of gas may constitute waste.
15. Unitization of the pools within the Prudhoe Bay Field would conserve natural resources, prevent waste, and secure other benefits including that of eliminating unnecessary operations, thereby minimizing adverse effects upon the ecology.
16. Completion of a well in the smallest governmental quarter section in the defined pool area will not adversely affect correlative rights.

NOW, THEREFORE, IT IS ORDERED THAT the rules hereinafter set forth apply to the following described area:

March 12, 1971

T 11 N, R 10 E, U.M.  
Sections 1, 2, 11, 12,  
13, 14, 23, 24, 25, 26,  
35, and 36.

T 11 N, R 11 E, U.M.  
All

T 11 N, R 12 E, U.M.  
Sections 3, 4, 5, 6, 7,  
8, 9, 10, 17, 18, 19,  
20, 29, 30, 31, and 32.

T 12 N, R 10 E, U.M.  
Sections 1, 2, 11, 12,  
13, 14, 23, 24, 25, 26,  
35, and 36.

T 12 N, R 11 E, U.M.  
All

T 12 N, R 12 E, U.M.  
All

T 12 N, R 13 E, U.M.  
Sections 5, 6, 7, 8, 17,  
18, 19, and 20.

T 13 N, R 10 E, U.M.  
Sections 13, 14, 15, 16,  
21, 22, 23, 24, 25, 26,  
27, 28, 33, 34, 35, and  
36.

T 13 N, R 11 E, U.M.  
Sections 17, 18, 19, 20,  
25, 26, 27, 28, 29, 30,  
31, 32, 33, 34, 35, and  
36.

T 13 N, R 12 E, U.M.  
Sections 25, 26, 27, 28,  
29, 30, 31, 32, 33, 34,  
35, and 36.

Rule 1. Definition of Pool.

The Prudhoe Bay Kuparuk River Oil Pool is defined as the accumulation of oil that is common to and correlates with the accumulation found in the Mobil Oil Corporation Mobil-Phillips North Kuparuk State No. 26-12-12 well between the depths of 6,765 and 7,765 feet.

Rule 2. Well Spacing.

Not more than one well may be completed in this pool in a governmental quarter section or governmental lot corresponding thereto, nor shall any well be completed in this pool in a governmental quarter section or governmental lot corresponding thereto which contains less than 125 acres, nor shall any pay opened to the well bore be closer than 500 feet to a property line where ownership changes or be closer than 1,000 feet to any pay in the same pool opened to the well bore of another well.

Rule 3. Casing and Cementing Requirements.

(a) Casing and cementing programs shall provide adequate protection of all fresh waters and productive formations and protection from any pressure that may be encountered.

(b) Wells shall be protected from damage caused by permafrost thawing by the use of refrigeration and/or insulation or by the use of slip joint casing.

(c) For proper anchorage and to prevent an uncontrolled flow, a string of casing shall be set at least 500 feet below the base of the permafrost section but not below 2,700 feet unless a greater depth is approved by the Committee upon a showing that no potentially productive pay exists above the proposed casing setting depth, and sufficient cement shall be used to fill the annulus behind the pipe to the base of the permafrost section.

(d) Installation of a permafrost string of slip joint casing above the casing string required by (c) without cementing through the expected zone of subsidence may be permitted.

(e) Production casing shall be landed through the completion zone and cement shall cover and extend to at least 500 feet above each hydrocarbon-bearing formation which is potentially productive. In the alternative, the casing string may be set and adequately cemented at an intermediate point and a liner landed through the completion zone. If such a liner is run, the casing and liner shall overlap by at least 100 feet and the annular space behind the liner shall be filled with cement to at least 100 feet above the casing shoe, or the top of the liner shall be squeezed with sufficient cement to provide at least 100 feet of cement between the liner and casing annulus. Cement must cover all potentially productive intervals behind the liner.

(f) Casing or liner, after being cemented, shall be satisfactorily tested to not less than 50 per cent of minimum internal yield pressure or 1,500 pounds per square inch, whichever is less.

Rule 4. Blowout Prevention Equipment and Practice.

(a) Before drilling below the casing string required by Rule 3(c), all drilling wells shall have three remotely controlled blowout preventers, including one equipped with pipe rams, one with blind rams and one bag type. The blowout preventers and associated equipment shall have 3,000 psi working pressure rating and 6,000 psi test pressure rating, and shall be installed prior to penetrating the Kuparuk River Formation. All such equipment shall include a drilling spool with minimum three inch side outlets (if not on the blowout preventer body), a minimum three inch choke manifold, or equivalent, and a fill-up line. All equipment shall have a minimum working pressure capable of withstanding formation pressures reasonably expected in this area at the depth being drilled, with adequate safety factors. The drilling string shall contain full-opening valves above and immediately below the kelly during all circulating operations with the kelly. Two emergency valves will be conveniently located on the drilling floor with rotary subs for all connections in use, one valve to be an "inside blowout preventer" of the spring-loaded valve type and the second to be of the manually-operated ball valve type or any other type which will perform the same function.

(b) All blowout preventer rams, kelly valves, emergency valves and choke manifolds shall be tested to the manufacturers' recommended working pressure when installed or changed and at least once each week thereafter. An

operator may request approval of blowout prevention equipment rated at a higher working pressure than that required by (a). In this event the operator will not be required to test the blowout prevention equipment to a pressure in excess of that which would be required for the equipment specified under (a) provided the approved drilling permit includes a statement of the operator's intent to test at the lower pressure. Bag-type preventers shall be tested to the recommended working pressure when installed and to 50% recommended working pressure once each week thereafter. Test results shall be recorded on written daily records kept at the well.

(c) All blowout prevention equipment shall be adequately protected to ensure reliable operation under the existing weather conditions. All blowout prevention equipment shall be checked for satisfactory operation during each trip. The use of blowout prevention equipment shall be in accordance with good established practice and all equipment shall be in good operating condition at all times.

Rule 5. Automatic Shut-In Equipment.

Upon completion, each well shall be equipped with a suitable safety valve installed below the base of the permafrost which will automatically shut in the well if an uncontrolled flow occurs.

Rule 6. Bottomhole Pressure Survey.

Prior to initial sustained production from each well, a maximum buildup bottomhole pressure test shall be taken. A key well bottomhole pressure survey shall be taken between 90 and 120 days after commencement of substantial production and each 90 days thereafter. Bottomhole pressures obtained by a static buildup pressure survey, a 24-hour shut-in instantaneous test or a multiple flow rate test will be acceptable. The datum of the test and other details will be determined by the operators subject to approval by the Committee. The test results shall be reported on reservoir pressure report Form P-12 which shall be filed with the Committee by the fifteenth day of the month following the month in which each test was taken.

Rule 7. Gas-Oil Ratio Tests.

Between 90 and 120 days after substantial production starts and each six months thereafter, a gas-oil ratio test shall be taken on each producing well. The test shall be of at least 12 hours duration and shall be made at the producing rate at which the operator ordinarily produces the well. The test results shall be reported on gas-oil ratio test Form P-9 within fifteen days after completion of the survey. The Committee shall be notified at least five days prior to each test.

Rule 8. Gas Venting or Flaring.

The venting or flaring of gas is prohibited except as may be authorized by the Committee in cases of emergency or operational necessity.

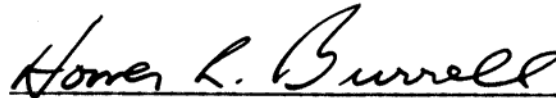
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DONE at Anchorage, Alaska, and dated March 12, 1971.




Thomas R. Marshall, Jr., Executive Secretary  
Alaska Oil and Gas Conservation Committee

Concurrence:



Homer L. Burrell, Chairman  
Alaska Oil and Gas Conservation Committee



O. K. Gilbreth, Jr., Member  
Alaska Oil and Gas Conservation Committee